Amendments to the Claims:

Please amend the claims as shown and add the following new claims.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A plasma processing apparatus for processing a substrate with plasma by applying a high frequency to a reaction chamber so as to generate plasma therein, and applying a second high frequency to a substrate holder on which the substrate is placed so as to control the ion energy to the substrate; wherein

a dielectric that is exposed to the plasma substantially covers a surface portion of an inner [[side]] wall of the reaction chamber, an electrically conductive member is disposed within the reaction chamber so as to be exposed to the plasma within the reaction chamber at a position with respect to the inner [[side]] wall of the reaction chamber which is covered with the dielectric, and the electrically conductive member is electrically coupled to earth one of directly and through the inner [[side]] wall of the reaction chamber so as to form a DC earth which enables direct current to flow therein from the plasma, the electrically conductive member has an area in a range of 0.1% to 10% of the inner [[side]] wall area of the reaction chamber, a magnetic field generation means is disposed outside of the reaction chamber so as to apply a magnetic field to the plasma, and the electrically conductive member forming the DC earth is disposed at a position crossing a magnetic line of force that is closer to the substrate holder than a magnetic line of force that crosses the inner [[side]] wall of the reaction chamber having the dielectric thereon.

2. (currently amended) The plasma processing apparatus according to claim 1, wherein

the dielectric covers 90 % or more of a total surface area of the inner [[side]] wall of the reaction chamber.

3. (canceled)

4. (currently amended) The plasma processing apparatus according to any one of claims 1 and 2, wherein

the electrically conductive member forming the DC earth is located at a position within the reaction chamber where a floating potential of plasma is substantially equal to or greater than a floating potential of the plasma at the inner [[side]] wall of the reaction chamber covered with the dielectric with respect to the high frequency or the second high frequency.

5. (previously presented) The plasma processing apparatus according to any one of claims 1 and 2, wherein

the dielectric is a protective coating formed of insulating ceramic such as carbide, oxide or nitride, as exemplified by SiC, boron carbide and alumite, and a thickness d of the dielectric coating is determined so that, with respect to the relationship between frequency f of the high frequency applied to the substrate and the dielectric constant ε of the dielectric, an impedance per unit area $R = d/(2\pi f\varepsilon)$ when high frequency is propagated by capacitive coupling through the dielectric is 100 Ω or smaller.

Claim 6 (canceled)

7. (previously presented) The plasma processing apparatus according to any one of claims 1 and 2, wherein

either a base material of the electrically conductive member forming the DC earth or a protective coating disposed on a surface of the electrically conductive member forming the DC earth and coming into contact with the plasma is composed of conductive ceramic, SiC, Al or Al compound.

8. (previously presented) The plasma processing apparatus according to any one of claims 1 and 2, wherein

when a base material of the electrically conductive member forming the DC earth is composed of a non-metallic material such as conductive ceramic, SiC, Al or Al compound, a conductive part having a conductivity σ of 1 Ωcm or less is provided to a surface of the base material by evaporation, spraying or interposing, thereby reducing an earth resistance of the electrically conductive member forming the DC earth.

9. (withdrawn) A plasma processing method for processing a substrate with plasma by applying a high frequency to a reaction chamber so as to generate plasma therein, and applying a second high frequency to a substrate holder on which the substrate is placed so as to control the ion energy to the substrate; comprising

covering 90 % or more of a total surface area of an inner wall of the reaction chamber that is directly exposed to plasma with a dielectric, and disposing a DC

earth comprising a conductive portion that is earthed and having an area less than 10 % of the inner wall of the reaction chamber; and

performing plasma processing to the substrate in the reaction chamber having said DC earth located at a position where a floating potential of plasma is higher than the floating potential of plasma at the inner wall of the reaction chamber that is closest to the substrate.

10. (previously presented) The plasma processing apparatus according to claim 4, wherein

the dielectric is a protective coating formed of insulating ceramic such as carbide, oxide or nitride, as exemplified by SiC, boron carbide and alumite, and a thickness d of the dielectric coating is determined so that, with respect to the relationship between frequency f of the high frequency applied to the substrate and the dielectric constant ε of the dielectric, an impedance per unit area $R = d/(2\pi f\varepsilon)$ when high frequency is propagated by capacitive coupling through the dielectric is 100 Ω or smaller.

11. (previously presented) The plasma processing apparatus according claim 4, wherein

either a base material of the electrically conductive member forming the DC earth or a protective coating disposed on a surface of electrically conductive member forming the DC earth coming into contact with the plasma is composed of conductive ceramic, SiC, Al or Al compound.

12. (previously presented) The plasma processing apparatus according to claim 4, wherein

when a base material of the electrically conductive member forming the DC earth is composed of a non-metallic material such as conductive ceramic, SiC, Al or Al compound, a conductive part having a conductivity σ of 1 Ωcm or less is provided to a surface of the base material by evaporation, spraying or interposing, thereby reducing an earth resistance of the electrically conductive member forming the DC earth.

13. (new) The plasma processing apparatus according to claim 1, wherein the electrically conductive member is disposed within the reaction chamber and is electrically coupled to earth by a wire extending through the inner wall of the reaction chamber.

14. (new) The plasma processing apparatus according to claim 1, wherein the electrically conductive member is positioned in the reaction chamber so as to enable suppression of chipping of the surface portion of the inner wall of the reaction chamber.